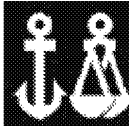


Operational FQT Report : 07-Feb-2014

STENA CONQUEST (9252436)



DNV

Summary



Based on the Aluminium + Silicon result(s), operational difficulties may be experienced. Based on the Sulfur result(s) and the commercial sample received, the fuel is potentially non-compliant. Please refer to the advice on the next page for more information.



Please take note of the precautions on the next page related to the fuel quality trend of the past four bunker samples

Sample Number	ROT1404706	Customer	NORTHERN MARINE MANAGEMENT
Product Type	(LSFO)	Seal Data	DNVPS, SEAL INTACT, 6984265
Bunker Port	ROTTERDAM		
Bunker Date	01-Feb-2014	Related Samples	
Sampling Point	SHIP MANIFOLD	Supplier	6984264
Sampling Method	CONTINUOUS DRIP	Ship	6984263
Sent From	UNKNOWN	SHIP MARPOL	6984266
Date Sent	UNKNOWN	MARPOL	514058
Arrived at Lab	05-Feb-2014		
Supplier	V-MARINE FUELS		
Loaded From	NOORDZEE		
Quantity per C.Eng.	550		

Receipt Data

Source Of Data	B.D.N.	Sulfur	0.97	% m/m	
Density @ 15°C	990.7	kg/m³	Volume @ 15°C	547.617	m³
Viscosity @ 50°C	363.2	mm²/s	Quantity	542.524	MT

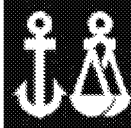
Fuel Quality

Current	Trend	Parameter	ROTTERDAM 01-Feb-2014	ROT1404707 ROTTERDAM 03-Feb-2014	ROT1404249 OFF TEMA 18-Jan-2014	ROT1348506 AMSTERDAM 20-Dec-2013	Unit
		Density @ 15°C	991.0	990.2	990.9	991.0	kg/m³
		Viscosity @ 50°C	382.3	373.8	385.2	385.1	mm²/s
		Water	0.2	0.1	0.2	0.2	% V/V
		Micro Carbon Residue	12	14	16	14	% m/m
		Sulfur	1.02	2.44	2.29	2.83	% m/m
		Total Sediment Potential	0.01	0.02	0.02	0.01	% m/m
		Ash	0.03	0.05	0.05	0.06	% m/m
		Vanadium	28	117	158	163	mg/kg
		Sodium	10	16	24	20	mg/kg
		Iron	18	26	42	38	mg/kg
		Nickel	14	34	37	48	mg/kg
		Calcium	13	4	LT 1	4	mg/kg
		Magnesium	2	1	LT 1	LT 1	mg/kg
		Zinc	LT 1	1	LT 1	2	mg/kg
		Phosphorus	2	1	LT 1	2	mg/kg
		Potassium	1	1	LT 1	LT 1	mg/kg
		Pour Point	LT 24	LT 24	LT 24	LT 24	°C
		Flash Point	GT 70	GT 70	GT 70	GT 70	°C
		Aluminium + Silicon	44	45	11	31	mg/kg
		CCAI (Ignition Quality)	852	851	852	852	-
		Reported problems with fuel		No	No	No	



Operational FQT Report : 07-Feb-2014

STENA CONQUEST (9252436)



DNV

Operational Advice :

<input type="checkbox"/>	<p>Sulfur - Based on this commercial sample and the sulfur content specified on the BDN, the fuel oil is potentially non-compliant if used within a designated Emission Control Area (ECA, ref. MARPOL Annex VI Reg. 14(4)). It is recommended that the situation is recorded through a notification or Note of Protest (NoP) issued by the Master. Only the relevant official authorities can then advise on any further action necessary. Please note that the official MARPOL sample provided by the supplier is the governing sample regarding the compliance with this statutory requirement. For assistance issuing the Note of Protest, please refer to DNVPS' Instruction Manual.</p>
<input type="checkbox"/>	<p>Fuel contains abrasive contaminants as indicated by Aluminium + Silicon. Efficient centrifuging of the fuel is most important in order to reduce the abrasive contaminant to an acceptable level.</p> <p>Maintain fuel temperature at 98°C at separator inlet and use reduced flow rate. Consider to operate separators in parallel. Please refer to manufacturers instructions for further information.</p> <p>Based on Aluminium + Silicon content, we recommend to send a set of FSC samples to assess the efficiency and confirm optimum operation of the fuel treatment plant. As a minimum, representative samples taken before and after the separators are required for this assessment. Red labels should be used for the FSC samples. Please refer to the Instruction Manual included in the sample kits for more detailed information.</p>
	<p>Noticeable amount of abrasive contaminants as indicated by Aluminum + Silicon can accumulate in the tanks onboard also for fuels within specification. It is recommended that tanks and filters are frequently drained to avoid carry over to the engine. We also recommend that samples are taken regularly before and after centrifuge to check centrifuge efficiency (Fuel System Check testing).</p>
	<p>Approximate fuel temperatures:</p> <p>Injection:</p> <p>145°C for 10 mm²/s 125°C for 15 mm²/s 115°C for 20 mm²/s 110°C for 25 mm²/s</p> <p>Transfer :</p> <p>45°C</p>
<p>DNVPS Colour Code used :</p> <p> Satisfactory <input type="checkbox"/> Caution Use of fuel not recommended Fuel Trend</p>	
<p>Note:</p> <p>LT means Less Than, GT means Greater Than.</p> <p>Quantity (Weight) is based on BDN Volume, DNVPS Density and a weight factor of 1.1 kg/m³ (ASTM D1250-80 Table 56).</p> <p>Best Regards,</p> <p>On behalf of DNV Petroleum Services Pte Ltd</p> <p>Arent Jansen</p> <p>Technical Advisor</p> <p>End of Report for STENA CONQUEST</p> <p>Reference to part(s) of this report which may lead to misinterpretation is prohibited.</p> <p>For technical or operational advice or further information on this report please contact your nearest DNVPS office or contact us directly at Tel : +31 10 2922600 Email : tvpnl155@dnvps.com</p>	